

National Drinking Water Advisory Council

Meeting Notes

December 8 - 9, 2010

Phoenix Park Hotel
520 North Capitol Street, N.W.
Washington, D.C. 20037

Prepared for:
United States Environmental Protection Agency
Office of Ground Water and Drinking Water
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Attendees

National Drinking Water Advisory Council (NDWAC)

Gregg Grunenfelder, Chair, Deputy Secretary, Washington State Department of Health, Olympia, WA
Elston Johnson, Manager, Public Drinking Water Section, Texas Commission on Environmental Quality, Austin, TX
Maria Elena Kennedy, Executive Director, Quail Valley Environmental Coalition, Rancho Cucamonga, CA
Timothy Kite, Water Superintendent, Long Creek Township Water Department, Decatur, IL
Olga Morales, Rural Development Specialist, Rural Community Assistance Corporation, Dona Ana, NM
Douglas Owen, Vice President and Chief Technology Officer, Malcolm Pirnie, Inc., White Plains, NY
Lisa Sparrow, President, Utilities, Inc., Northbrook, IL
David Saddler, Manager, Water/Wastewater and Propane Department, Tohono O'odham Utility Authority, Sells, AZ
Carl Stephani, Executive Director, Central Connecticut Regional Planning Authority, Unionville, CT
Hope Taylor, Executive Director, Clean Water for North Carolina, Durham, NC
Robert Vincent, Environmental Administrator, Bureau of Water Programs, Florida Department of Health, Tallahassee, FL
Jennie Ward-Robinson, Executive Director, Institute for Public Health and Water Research, Chicago, IL
June Weintraub, Senior Epidemiologist, San Francisco Department of Public Health, San Francisco, CA

Centers for Disease Control and Prevention (CDC) Liaison

Dr. Max Zarate-Bermudez, Division of Emergency and Environmental Health Services, National Center for Environmental Health, CDC, Atlanta, GA

U.S. Environmental Protection Agency (EPA) Attendees

Benjamin Bahk, Office of Enforcement and Compliance Assurance (OECA)
Pam Barr, Director, Standards and Risk Management Division (SRMD), Office of Ground Water and Drinking Water (OGWDW)
Mary Rose Bayer, Drinking Water Protection Division (DWPD), OGWDW
Ron Bergman, Chief, Protection Branch, DWPD, OGWDW
Eric Burneson, Acting Deputy Director, OGWDW
Ann Codrington, Acting Director, DWPD, OGWDW
Margie DeBerry, OGWDW
Cynthia Dougherty, Director, OGWDW
Mindy Eisenberg, Associate Chief, Protection Branch, DWPD, OGWDW
Sheila Frace, Acting Deputy Director, DWPD, OGWDW
Randy Hill, Deputy Director, Office of Wastewater Management (OWM)

Jeff Jollie, Hydrogeologist, Protection Branch, DWPD, OGWDW
Richard Keigwin, Director, Pesticide Re-evaluation Division, Office of Pesticide Programs (OPP)
Wynne Miller, Acting Chief, Targeting and Analysis Branch, SRMD, OGWDW
Jennifer Orme-Zavaleta, Office of Research and Development (ORD)
Mark Pollins, OECA
Peter Silva, Assistant Administrator, Office of Water (OW)
Tom Speth, Division Director, Water Supply and Water Resources Division (WSWRD), ORD
Jackie Springer, Program Specialist, OGWDW
Nancy Stoner, Deputy Assistant Administrator, OW
David Travers, Director, Water Security Division (WSD), OGWDW
John Whitler, WSD, OGWDW
Jim Willis, Director, Chemical Control Division, Office of Pollution Prevention and Toxics (OPPT), Office of Chemical Safety and Pollution Prevention (OCSPP)

Designated Federal Officer (DFO)

Suzanne Kelly, OGWDW

Members of the Public

Matt Ampleman, American Geological Institute (AGI)
Erica Brown, Director of Regulatory Affairs and Scientific Program Development, Association of Metropolitan Water Agencies (AMWA)
Daneen Farrow Collins, CDC
Steve Fries, Computer Sciences Corporation (CSC)
Paul Fleming, Seattle Public Utilities
Cynthia Lane, American Water Works Association (AWWA)
Vanessa Leiby, The Cadmus Group, Inc.
Erica Martinson, Inside Washington Publishers
Brendan Mascarenhas, American Chemistry Council (ACC)
Olga Naidenko, Environmental Working Group (EWG)
Mark Nelson, Horsley Witten Group, Inc.
Ari Neuman, Rural Community Assistance Partnership (RCAP)
Bridget O'Grady, Association of State Drinking Water Administrators (ASDWA)
Lisa Ragain, Aqua Vital
Robert Stewart, RCAP
Jim Taft, ASDWA
Ed Thomas, National Rural Water Association (NRWA)
Lynn Thorp, Clean Water Action
Steve Via, Regulatory Engineer, AWWA
Beth Word, Platts, McGraw-Hill Companies

Meeting Summary: Wednesday, December 8, 2010

WELCOME AND OPENING REMARKS

Suzanne Kelly, Designated Federal Officer (DFO), and **Gregg Grunenfelder**, Chairman, opened the meeting and provided an overview of the agenda. Two Council members, Jeff Cooley and Dennis Diemer, were not in attendance.

Peter Silva, Assistant Administrator, Office of Water (OW), provided opening remarks and charge for the meeting. He commended the Council's commitment to protect drinking water resources and recognized the time commitment is above and beyond professional and personal responsibilities of Council members. Mr. Silva provided an overview of EPA's priorities for OW in the context of overall priorities for the Agency. The overall goal for the drinking water program is that "America's drinking water is safe, affordable, and secure, everywhere and every day, and Americans know it." Mr. Silva highlighted the following priorities within the Office of Water: 1) Sustainable Communities, 2) Healthy Watersheds, and 3) Taking Action on Climate Change.

1. Sustainable Communities

Sustainable and livable communities include the sustainability of drinking water systems, since all communities need a reliable and affordable source of drinking water. Small and very small systems continue to face challenges with capacity and long-term sustainability. It is imperative that communities disproportionately affected by pollution and underserved populations, including tribal communities, have access to clean and safe water. EPA is leading efforts to make certain that Environmental Justice (EJ) informs decision-making and regulatory decisions. The EJ 2012 initiative requires the Agency integrate EJ into all rule-making and everyday programs. The goal is to ensure that any action that EPA takes does not disproportionately impact EJ communities.

The recently released Clean Water and Drinking Water Infrastructure Sustainability Policy represents the next step in EPA's ongoing efforts to work with stakeholders to move the water sector toward greater sustainability. Given the emphasis on infrastructure planning, EPA is working with utilities, states, and other stakeholders to develop guidance on what constitutes a sustainable planning process. Additionally, EPA has an ongoing effort to revitalize the capacity development program to ensure that EPA and states are partnered in doing all that they can to develop capacity across the full range of a water systems' business.

Mr. Silva also provided an update on the Drinking Water Strategy. EPA is considering discussions from the last meeting as well as the recommendations from the Council's letter to Administrator Jackson as EPA moves ahead. Some of the efforts highlighted include the anticipated announcement that contaminants will be addressed by groups and the signed Memorandum of Understanding (MOU) with regulatory partners in the states to facilitate sharing of monitoring data.

2. Healthy Watershed Initiative

EPA's Healthy Watersheds Initiative addresses the priority to protect healthy watersheds by working with states, federal agencies, local governments, and non-governmental partners. EPA continues to provide direct assistance to states close to adopting numeric criteria in their water quality standards and build a strong science-based foundation for developing new 304(a) criteria. Work conducted under this initiative reflects a collaborative partnership that builds on work to date between EPA and state partners.

3. Taking Action on Climate Change

Mr. Silva gave an overview of several proactive initiatives underway to take action on climate change, such as the recently signed Underground Injection Control Carbon Dioxide Geologic Sequestration final rule and the Climate Ready Water Utilities Program. The Agency expressed gratitude for the advice and input the Council has provided on both of these initiatives.

Discussion:

Mr. Kite commented that 90% of the population is served by 10% of the water systems and 90% of water systems are small systems. It is very hard for small systems to compete with big systems. It is not affordable for a water system to serve some customers in rural areas without special grants or funds. In regard to hydraulic fracturing, there are a lot of water systems getting contaminated. Industry needs to take responsibility.

Mr. Silva responded that one area of focus is how to work better with State Revolving Funds (SRFs) and increase the sustainability of small systems. Developing new technologies is part of the issue. In regard to hydraulic fracturing, OW is working with the Office of Research and Development (ORD) to study the connection between hydraulic fracturing and drinking water.

Ms. Kennedy asked for more information regarding the EJ 2012 initiative.

Mr. Silva responded that there has been strong interest from Administrator Jackson to institutionalize EJ into environmental programs. Each office within EPA has taken on a different component of the effort focusing on how EPA headquarters can work better with the Regions and address issues of permitting. Administrator Jackson hosted a meeting after the Executive Order regarding EJ was released. Since then, nothing had really been done. This is another effort to revive the commitment to EJ. Mr. Silva suggested that the Council continue to incorporate EJ into discussions at future meetings.

Ms. Taylor commented that permitting is an important issue regarding EJ. The Environmental Justice Advisory Council (EJAC) called for more than just a preliminary study. There was also a recent press release by the Office of Regulatory Affairs, which mentioned possible long term waivers for arsenic and references a previous NDWAC letter to the EPA Administrator.

Mr. Burneson explained that the article was published by Inside EPA and discussed affordability and the small system variance policy. This was not directly linked to the Arsenic Rule action being taken at the time.

Ms. Dougherty added that there was confusion over this article because it was released inadvertently and not correctly posted on the website.

Mr. Grunenfelder commented that point of use (POU) treatment is a possible alternative for small systems. There is the technology piece, but also the operational piece, which is often the more challenging part for small systems.

Ms. Dougherty added that communities are testing technologies such as POU treatment to help them meet the new Arsenic Rule requirements.

Mr. Burneson added that EPA has issued guidance regarding how systems can use POU treatment to meet the Arsenic and Radionuclide Rules. The issue is really at what point it becomes a cost effective practice. Due to economies of scale, POU is often cost effective for systems that have less than 100 service connections. Otherwise, centralized treatment is typically more cost effective. The statutes are very clear that POU is appropriate, but it must be maintained by the water utility, which requires entry into people's homes.

Mr. Saddler commented that due to the numerous issues with POU systems, focus should be placed on point of entry treatment. Issues with POU include public health considerations, consumer maintenance, economies of scale, and education and outreach, etc.

Mr. Grunenfelder commented that many states, including Washington, are having budget issues. Mr. Grunenfelder asked whether there is any information on EPA's budget and how it might impact small systems and sustainability.

Mr. Silva stated that EPA's Fiscal Year (FY) 2011 budget is not yet final so he did not have information to share at this time.

Ms. Dougherty added that details regarding the FY 2011 budget are unknown. There is a continued resolution through December 18, 2010, and Congress will need to decide whether to extend that or finalize the budget for the year.

Ms. Weintraub commented that in California there is increasing interest in using different qualities of water for different uses. This raised the issue of local jurisdiction and there is a struggle with how to develop regulations and be consistent. There are opportunities for crossover between potable uses and quantity and quality issues. This may be an area where lessons learned from Australia may be useful.

Mr. Silva responded that EPA has to start thinking outside of the box. Existing infrastructure and technologies may not match the issues we are facing.

Ms. Ward-Robinson commented that the most challenged communities are those with economic challenges, which do not have the capacity to address issues as they arise and are unable to provide effective public education regarding the issues. There is a need to think about adaptive practices to address these economic challenges. This needs to be done within an atmosphere that recognizes that there are trust/distrust issues. Education and outreach becomes very important, particularly when trying to implement technical solutions. In order for solutions to be sustainable, education and outreach must be incorporated more successfully. Other countries might have examples of best practices for adaptive practices that can be evaluated for applicability.

Mr. Silva agreed with these points.

Mr. Saddler inquired as to whether EPA is discussing the definition of sustainability for small distribution systems with others in the field.

Ms. Dougherty responded that EPA is working to define sustainability consistent with others and is collaborating with the AWWA and the Water Environment Foundation (WEF) on workforce development issues.

Ms. Morales commented that more education and outreach is needed. He noted that it is important to engage other industries in the effort to develop sustainable communities and to reach beyond the customer base, as utilities are responsible for issues that go beyond the customer, such as contamination. Financial impacts of this are another issue. This may be beyond EPA's purview, but may be an area EPA can engage in with other federal agencies.

Mr. Silva commented that EPA works closely with the U.S. Department of Agriculture (USDA) regarding nutrients. They are working with farmers to improve practices to avoid water quality degradation.

Mr. Grunenfelder commented that it is important to look at how future projections of water availability and quality fit into the current regulatory constructs. For example, there is increasing interest in appropriate uses for rainwater systems collection and use.

Mr. Johnson asked whether emerging contaminants are still a priority, specifically as they relate to human health and environmental impacts. A recently released report identified that there is a need for more research regarding impacts and economic methods of treatment for pharmaceuticals. There is a large educational component to this as well.

Ms. Dougherty responded that EPA continues to look at emerging contaminants. There are a few pharmaceuticals on the Contaminant Candidate List (CCL). The gaps are really in the research area and determining whether they can be measured. Source water protection becomes important in preventing additional contamination. Ms. Dougherty expressed interest in the report Mr. Johnson mentioned.

REGULATORY ACTIVITIES UPDATE

Pam Barr, Director, Standards and Risk Management Division (SRMD), Office of Ground Water and Drinking Water (OGWDW)

Ms. Barr provided an overview of EPA's regulatory activities. CCL 3 was published in October 2009 and contains 104 chemicals and 12 microbes. Final regulatory determinations for CCL 3 are due in July 2013. EPA is currently gathering available health and occurrence information to determine where the most public health benefits can be gained. In October 2008, EPA issued a Federal Register (FR) notice for public comment on its preliminary determination "not to regulate" perchlorate. An FR Supplemental Request for Comment was published in August 2009 and deliberations are ongoing. The final Unregulated Contaminant Monitoring Rule 2 (UCMR 2) was published in January 2007. Monitoring for 25 contaminants has been conducted from January 2008 – December 2010. Monitoring results are available at: <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/data.cfm>. EPA expects to propose UCMR 3 in early 2011.

The update to the Drinking Water Strategy focuses on four areas: addressing contaminants as groups; fostering the development of new drinking water technologies; using authority in multiple statutes to protect drinking water; and partnering with states to share more monitoring data.

EPA is required to review, and if determined appropriate, revise the National Primary Drinking Water Regulations every six years. The second Six Year Review was completed in 2010, through which 71 existing standards were reviewed. Four were determined to be candidates for revision: Tetrachloroethylene (also known as perchloroethylene), trichloroethylene, acrylamide, and epichlorohydrin. Trichloroethylene (TCE) and perchloroethylene (PCE) are being considered as part of a potential group under the Drinking Water Strategy. If they are not determined to be part of a group, revisions to the standard will be initiated in March 2011. Acrylamide and epichlorohydrin revisions will be initiated at a later date.

Updates were given on the Total Coliform Rule (TCR) and the Lead and Copper Rule (LCR), which have both been recently revised. In regard to LCR, EPA is looking specifically at lead service line replacement. The CDC recently released a report on the Washington, D.C. water system and the impacts of partial lead service line replacement on blood lead levels. The study found that in homes where there was partial lead service line replacement, there were high blood lead levels. EPA is considering the results of this study and looking at this issue closely.

Discussion:

Mr. Grunenfelder asked whether determinations on the 32 standards that have Risk Assessments in process will be included in the 2016 Six Year Review, or if there might be some action in the interim.

Ms. Barr responded that EPA does not have to wait until 2016 to take action, but it depends on the results of the Risk Assessments and the availability of resources.

Mr. Kite commented that it is important to look at the sources of contaminants and that National Pollutant Discharge Elimination System (NPDES) permits may be a way to limit inputs of contamination. It is very costly to do all of the water quality monitoring and would be more effective to limit inputs at the source.

Mr. Kite also inquired whether a water system is responsible for replacing a lead service line up to the curb box or into the house.

Ms. Barr responded that it is the utilities' responsibility to replace the lead service line up to the house. Utilities have to offer to the homeowner the option of replacing the rest of the lead service line at the homeowner's cost. The majority of homeowners choose not to have their lead service lines replaced for a variety of reasons. Rented dwellings can also be a challenge because of the ownership issue.

Mr. Burneson commented that the LCR uses tiering criteria to identify houses with the greatest level of leaching and likelihood of lead contamination. Water systems then target these systems to address elevated levels of lead.

Mr. Vincent commented that Florida sent a letter to EPA saying they were not in favor of the TCR revisions. The Federal Advisory Committee Act (FACA) process for the rule was well done and identified many compromises and made changes to the TCR that will help address new issues. Regarding the TCE/PCE revisions, Mr. Vincent asked how that process will work.

Mr. Burneson responded that TCE/PCE will be addressed when looking at regulating groups of contaminants. They are included in the carcinogens group.

Mr. Saddler commented that if a homeowner does not choose to have their portion of the lead service line replaced, it is the responsibility of the utility to implement corrosion control.

Mr. Burneson clarified that all large systems must implement corrosion control and small systems must optimize for corrosion control. If the action level is exceeded, public education and lead service line replacement may be required.

Mr. Saddler added that the financial burden is still on the small systems.

Mr. Burneson added that with exception of the service line that is owned by the homeowner, the burden falls on the utility. There are mechanisms that limit the amount of lead allowed in plumbing fixtures, such as the NSF 61 standard in plumbing codes. This standard has been revised over time and states can require more stringent standards. For example, Vermont and California have gone farther.

Ms. Weintraub asked whether the CDC study made an assessment of how many home were owner-occupied versus tenant-occupied in the study.

Ms. Barr responded that they would have to look more closely at the CDC study.

Mr. Burneson added that all owners of buildings were contacted, regardless of the building being owner-occupied or tenant-occupied. However, he is also unaware of the number of owner versus rental occupied houses in the study that chose to have their lead service lines replaced.

Ms. Weintraub added that there might be an opportunity to address this issue through regulation.

Ms. Dougherty added that lead service line replacement has been voluntary in Washington D.C.

Ms. Barr added that lead service line replacement also occurs when there is a water main break or replacement, as the utilities are already digging up the ground. This is occurring in many places throughout the country.

Mr. Zarate-Bermudez asked what is being done in regard to preventing changes in treatment that negatively affect lead leaching.

Ms. Barr responded that if a system chooses to change treatment technologies, they are required to consult with the state. In Washington, D.C., the water system switched from the use of free chlorine to chloramines, which contributes to lead leaching.

Mr. Burneson added that it is important to look at potential factors that relate to elevated lead levels, including changes in treatment technologies. There are a variety of factors that can cause elevated lead levels.

DRINKING WATER STRATEGY STATUS: ADDRESSING CONTAMINANTS AS GROUP(S) UNDER THE SAFE DRINKING WATER ACT

Pam Barr, Director, SRMD, OGWDW

Ms. Barr provided an update on regulating contaminants in groups. EPA conducted significant outreach to various stakeholder groups to get input regarding regulating contaminants as groups. EPA held a web-dialogue, which was the first attempt to have ongoing, online input. Four factors were identified that should be considered when developing groups of contaminants.

- Similar health effect endpoints;
- Removed by common treatment or control process;
- Measured by common analytical methods; and
- Known or likely occurrence and co-occurrence.

Two groups that have been proposed are carcinogenic volatile organic compounds (VOCs) and nitrosamines. Ms. Barr reviewed the strengths and challenges of each.

There are four potential approaches through which regulatory development for each group can occur. The standard approach establishes Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLG) for the contaminants in the group. The hazard index approach establishes a benchmark toxicity value for contaminants within a group that have a common non-cancerous health impact. The relative potency factor identifies the index chemical and determines the potency of other chemicals in a group in relation to the index chemical. This approach is often used for chemicals with a common mode of action. Finally, the treatment barrier approach defines an MCLG for the group of contaminants. If it is not technologically or economically feasible to reach the MCLG, utilities are given options to install and operate a treatment barrier approach to address members of the group.

The next steps in this process are to select an initial contaminant group and begin development of proposed regulations for that group. EPA's Science Advisory Board (SAB) will be consulted throughout the process.

Discussion:

Mr. Grunenfelder commented that cyanotoxins are of increasing concern to state health departments, particularly from a recreational water use perspective, and asked whether there is any occurrence data on cyanotoxins in drinking water.

Ms. Barr responded that more occurrence data on cyanotoxins are needed.

Ms. Dougherty added that EPA is working with CDC to help states address cyanotoxins, as they are increasingly becoming an issue for drinking and recreational uses of water.

Ms. Taylor commented that Clean Water for North Carolina has been working with the River Keeper Alliance to sample for perfluorinated compounds (PFCs) around a Dupont facility. However, it was very costly because there was only one company that had the ability to process the samples. This influences how much occurrence data are available.

Ms. Barr responded that EPA is interested in including PFCs in the UCMR 3. In order for a contaminant to be included, there has to be sufficient lab capacity to handle the analysis methods. At this time there are only two labs that process PFC samples. EPA ORD is working on refining the method for testing and analysis. UCMR 3 includes five PFCs and industry has agreed to eliminate using them by 2015.

Mr. Willis added that PFCs are being phased out internationally by the Stockholm Convention.

Mr. Vincent asked for more information regarding the approach for TCE/PCE.

Ms. Barr responded that this will be considered as part of the carcinogenic VOCs group. If it is decided to move forward with regulating by groups, the existing MCL will be revised and a group MCL will be determined.

Mr. Vincent asked for clarification regarding how a group MCL would account for a very low MCL of a particular contaminant.

Ms. Barr responded that this needs to be determined before deciding to regulate by groups of contaminants.

Ms. Morales asked whether the 25% of systems that reported N-Nitrosodimethylamine (NDMA) were concentrated in a particular geographic region.

Ms. Barr responded that approximately 46 states reported NDMA. California and Texas had a lot of instances of NDMA, but there are more systems monitoring for unregulated contaminants in these two states than in other states.

Ms. Weintraub raised the issue of reconciling studies that look very narrowly at specific exposure combinations with the broader way EPA is thinking about regulating contaminants in groups.

Ms. Barr responded that this is an important concern and one of the challenges in moving forward with regulating contaminants as groups.

Ms. Weintraub added that it is also important to look at the personal implications of studies.

Mr. Grunenfelder applauded the outreach efforts around regulating contaminants by groups.

DRINKING WATER STRATEGY STATUS: USE OTHER STATUTES TO PROTECT DRINKING WATER

Richard Keigwin, Director, Pesticide Re-evaluation Division, OPP; Jim Willis, Director, Chemical Control Division, Office of Pollution Prevention and Toxics (OPPT), Office of Chemical Safety and Pollution Prevention (OCSPP)

Mr. Keigwin reported on the ongoing efforts to use the authority of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA) to better protect drinking water. This effort falls under the third principle of the Drinking Water Strategy, which is to use multiple statutes to protect drinking water.

Mr. Willis explained that under TSCA, each new industrial chemical is reviewed before it is allowed on the market. TSCA requires updates from manufactures of over 25,000 pounds (lbs) of a chemical. This is an area of opportunity to target facilities and ensure chemicals are not getting into the drinking water supply.

This is an ongoing effort to work more closely across offices. The OCSPP and OW are working together to identify regulated and unregulated contaminants of interest to both offices. There is also an effort to build a more robust approach for prioritizing chemicals for follow-up action and for considering EJ concerns.

Under FIFRA and TSCA, EPA can require manufacturers to compile more data on a particular chemical. EPA is currently collecting information from companies regarding chemicals used in the hydraulic fracturing process. Many companies submitted data voluntarily. However, EPA subpoenaed information from one company.

Discussion:

Ms. Morales commented that it is great to see different programs working together on the same goal.

Mr. Grunenfelder asked how many chemicals enter the economy on an annual basis.

Mr. Willis responded that there are about 1,500 chemicals proposed every year and about 50% of these commercialize, and only a fraction of those actually become successful.

Mr. Grunenfelder commented that it is difficult to require meaningful evaluation of these chemicals in the current economic environment, especially when there are so many entering the market each year.

Mr. Willis responded that the economy is a sensitive point. Historically, 10% of chemicals that the agency reviews are regulated. Many specify no release to water. However, if companies push back, there is an option to set release limits. One of the challenges is to explore the life cycle of the chemical. Currently, focus is on the manufacturing facility and immediate downstream environments. EPA does not have the resources to look at the life cycle of each chemical, and this process requires input from many EPA offices. EPA has looked at the life cycle of nano-materials, because there are a lot of cross cutting issues.

Mr. Vincent added that it is great to see the collaboration between offices and asked for additional information regarding the health assessment approach.

Mr. Keigwin responded that this is an interesting challenge and that the agency is looking at different risk assessment approaches. EPA is trying to engage in direct dialogue around these issues. It is an area for more collaboration.

Mr. Vincent commented that there is little or no regulation of legacy pesticides and asked how states should be dealing with this issue.

Mr. Keigwin responded that under the pesticides law is a licensing statute which gives EPA authority over new and active licenses. The challenge is once the pesticide is no longer registered, it can no longer be regulated under FIFRA.

Ms. Taylor commented that in North Carolina, they are addressing the issue of legacy chemicals on a site-by-site basis. She also inquired as to the status of the subpoena process.

Mr. Willis responded that the subpoena is going well and the company is submitting the data on time.

REFOCUSING EPA'S OFFICE OF RESEARCH AND DEVELOPMENT PROGRAMS

Jennifer Orme-Zavaleta, Office of Research and Development (ORD)

Ms. Orme-Zavaleta provided an overview of ORD's efforts to refocus the Agency's research programs. The goal of this effort is to strengthen ORD's collaborations, emphasize sustainable solutions, advance innovation, employ integrated transdisciplinary research, and apply systems thinking and life cycle approaches. There is also an effort to incorporate anticipatory planning into research.

ORD is also working to better align its research programs with the Agency's Strategic Plan. This includes looking at water resource issues more holistically and re-thinking the approach to be used. This effort will also help promote innovative and sustainable solutions and maximize EPA's research effectiveness. The OneEPA effort is an Agency-wide effort encouraging offices to work together and partner more effectively with Regions.

Part of ORD's research will be on Integrated Transdisciplinary Research (ITR), which fosters a participatory approach, producing relevant and timely research results for 21st century problems. The specific approach depends on the problem being addressed and the capacity of ORD, but the goal is to balance research efforts with targeted work and a more forward looking component. The program will be launched in October 2011 and is expected to be included in the budgets for FY 2012 and 2013. A 2012 – 2015 Strategic Plan will also be developed.

Discussion:

Mr. Grunenfelder commented that the Council would be interested in reviewing the Strategic Plan once it has been developed.

Mr. Kite asked whether the Strategic Plan will be revisited and revised, as priorities may change over time.

Ms. Orme-Zavaleta responded that priorities will be revisited and that it is meant to be an iterative process. ORD will not go through the problem formulation process every year, but will review priorities.

Ms. Morales asked who will be included in the external stakeholder meetings.

Ms. Orme-Zavaleta responded that they are working with three research foundations to put together a list of participants. The goal is to include stakeholders early in the process and get their input from the start to help inform ORD's approach. ORD will also be convening a similar input session with the federal research community.

Ms. Weintraub commented that it is great to see holistic approaches and asked whether there is a strategy for allocating funding.

Ms. Orme-Zavaleta responded that funding will be prioritized. ORD will be working with the Agency and Regions to determine priorities and work to identify other organizations and partners that can do some of the work ORD is unable to complete.

Mr. Grunenfelder asked whether ORD is considering alternative strategies for funding their research.

Ms. Orme-Zavaleta responded that this is being considered as part of the ITR approach. ORD will be able to identify what other members of the federal research community are focusing on and where resources can be leveraged. Greater funding accountability will also be placed at the program level within ORD.

DRINKING WATER STRATEGY STATUS: FOSTERING DEVELOPMENT OF TREATMENT TECHNOLOGIES

Tom Speth, Division Director, Water Supply and Water Resources Division (WSWRD), ORD

Mr. Speth provided an overview of EPA's efforts to develop new drinking water treatment technologies to better address health risks. This effort addresses the second goal of the Drinking Water Strategy, which is to foster development of new drinking water technologies to address health risks posed by a broad array of contaminants. In EPA's effort to realign their research focus and develop outcome-oriented research activities, treatment technologies, remote monitoring and control technologies, and decision making tools and technologies have been identified as challenges. Implementation hurdles around new treatment technologies include operation and cost considerations, sustainability issues, and the confidence in the technology. ORD is collaborating with industry to develop new technologies, particularly in the areas of green chemistry and nanotechnology, through Cooperative Research and Development Agreements (CRADAs). Demonstration of these new technologies will be based on the Arsenic Demonstration Program.

Discussion:

Ms. Morales asked for clarification regarding the technology demonstrations and how sites are chosen.

Mr. Speth responded that sites were chosen for the Arsenic Demonstration Program with help from state primacy agencies, with a focus on systems that have funding issues.

Ms. Weintraub asked for more information regarding CRADAs.

Mr. Speth responded that CRADA agreements can be very helpful if the company is already working with a particular media and tend to work well if they are aligned with the company's research and development efforts. Some CRADA agreements do not work, but that is the reality of research.

Mr. Zarate-Bermudez commented that the CDC is collaborating with EPA's Nick Ashbolt on developing national guidance on greywater reuse and is consulting with him on a study related to decentralized water reuse for non-potable purposes. There is a need for additional risk assessments and epidemiological studies for the exposure assessment, but these require significant resources.

Mr. Speth commented that there is a project in Cincinnati, Ohio, focusing on green infrastructure for stormwater control and rainwater harvesting for non potable water uses. The cities of Louisville and Cleveland are also putting resources toward stormwater management.

Mr. Vincent inquired whether any of the technologies tested in the Arsenic Demonstration Program addressed radionuclides.

Mr. Speth responded that some were included in the demonstration project. More information can be found on EPA's website.

Mr. Vincent asked whether there is any effort to enhance the Environmental Technology Verification (ETV) program.

Ms. Speth responded that the current focus is on developing data that states can directly use. Often more data are needed than a typical ETV report.

Mr. Grunenfelder commented that it is important to take a comprehensive approach and encouraged holistic thinking going forward. In regard to POU and point of entry technologies, there are more than just operational challenges. There are also managerial challenges. It is important for primacy agencies to be on board.

DRINKING WATER STRATEGY STATUS: SHARING ACCESS TO MONITORING DATA

Ron Bergman, Chief, Protection Branch, Drinking Water Protection Division (DWPD), OGWDW

Mr. Bergman provided an overview of EPA's efforts to increase access to monitoring data. This effort falls under the fourth goal of the Drinking Water Strategy, which is to provide comprehensive access to data. The goal of this effort is to provide states, industry, and consumers one location from which to gain access to all relevant drinking water monitoring data and to enhance states' and EPA's ability to exchange monitoring data. There is also an effort to improve the public message regarding drinking water.

EPA entered into a memorandum of agreement with the Environmental Council of States (ECOS), the Association of State and Territorial Healthcare Officials (ASTHO), and ASDWA in November 2010. This will ensure state-EPA partnerships as the effort moves forward, and will address some concerns identified by the states, including resource burdens, EPA's use of the data, and messaging and interpretation of the data.

Data will be compiled in the State Drinking Water Information System (SDWIS), which will reduce the cost for states. It will also allow for public access to monitoring data, integration of six-year review data, and improved data analysis tools.

Discussion:

Mr. Grunenfelder asked how the data warehouse implementation will proceed.

Mr. Bergman responded that the data warehouse is needed to expand the capacity of SDWIS. It will house all of the data that will be accessible through SDWIS.

Ms. Sparrow commented that messaging of the data is critical. The data available are often misinterpreted. What is the process of developing the messaging portion of this?

Mr. Bergman responded that the plan is to build on Consumer Confidence Reports (CCRs), but it will take some time to work through all of the messaging issues.

Ms. Dougherty commented that there have been discussions in the past with states about providing EPA with more access to their data. It used to be technologically impossible to compile such large amounts of data, but now we have the capability. States are concerned with how the data will be used. We are trying to work with states from the beginning to develop consistent messaging.

Mr. Bergman added that there was an advisory council to assist with the development of CCRs when they were initially developed.

Mr. Grunenfelder commented that he is glad to see that messaging is a priority.

Ms. Sparrow added that there are many legal issues to be considered as well.

Mr. Johnson commented that there is staff from OGWDW that will be presenting to the Texas Commission on Environmental Quality (CEQ) regarding SDWIS.

Ms. Dougherty added that some of the outreach efforts are from the ASTHO, who represent some of the drinking water programs. They also interact with public health providers.

Ms. Ward-Robinson added that public health officials are a group that the public seeks in confidence. The public health sector can be very effective in helping deliver messages.

Ms. Weintraub asked for more information regarding the pilot web portal.

Mr. Bergman responded that it currently is functional through the Drinking Water Watch. However, there is no content with the data at this time.

SMALL SYSTEMS CAPACITY DEVELOPMENT/SUSTAINABILITY UPDATE

Mindy Eisenberg, Associate Chief, Protection Branch, DWPD, OGWDW

Ms. Eisenberg provided an overview of EPA's small systems approach. The goal of this effort is to improve the sustainability of communities by improving compliance; increase the number of sustainable systems; and strengthen state programs and Regional presence. There are four elements of the Small Systems Approach: strengthen and target financial support for small systems compliance and capacity; strengthen Capacity Development Programs and available resources; promote restructuring and partnerships where appropriate; and establish indicators of progress.

EPA established a Capacity Development Re-energizing Workgroup in January 2010 to identify challenges to small systems sustainability; explore current implementation of programs; discuss lessons learned, best practices, and possible solutions; and map an action plan for strengthening state programs. Six new workgroups have been established for 2011. These include: Managerial Capacity, Workforce, Program Collaboration, Restructuring and Partnerships, Coordinated Funding, and Re-energizing Ad Hoc Workgroup.

EPA finalized the Sustainability Policy in October 2010 to promote sustainable water infrastructure with a focus on infrastructure funded through the Clean Water and Drinking Water State Revolving Fund programs. The Policy promoted planning processes that support sustainability; encouraged community sustainability; promoted sustainable water and wastewater systems; and targeted SRF assistance.

Discussion:

Ms. Dougherty commented that it is important to ensure that long term federal investments are sustainable.

Ms. Dougherty corrected PowerPoint slide 11 and indicated that 33 states have not done principle forgiveness as a subsidy.

Mr. Grunenfelder commented that Washington had not used principle forgiveness until the American Recovery and Reinvestment Act (ARRA) program. They have been working to target investments toward sustainability of systems and help benefit programs in the long term. Mr. Grunenfelder also inquired as to whether the Association of Boards of Certification (ABC) has been involved in the discussion.

Ms. Eisenberg responded that ABC has been engaged in this effort.

Mr. Grunenfelder commented that it is assumed that small water systems have higher rates of non-compliance and asked where, at the national level, are there data to back that up.

Ms. Eisenberg responded that the Government Performance and Results Act (GPRA) tables show system level data and it is possible to determine what enforcement actions have been taken.

Mr. Bergman added that the GPRA tables compile annual data.

Ms. Morales asked whether there is a plan to bring the workgroups together to share information, as there could potentially be some overlap.

Ms. Eisenberg responded that the plan is to have quarterly discussions with all three working groups and that meeting notes and materials will be shared across all working groups.

Ms. Morales commented that there is often an issue with establishing contracts with operators and that there is not a standard criterion for operators. Each state has its own certification process and states do not recognize each other's states certifications. It would be helpful to have a common set of criteria.

Ms. Eisenberg responded that EPA has been working with ASDWA to develop training for contract operators and to provide guidance to small systems as to what they should expect from a contractor. Board Member trainings can also help them understand liability issues.

Mr. Kite added that Illinois has a template for small systems to use as a checklist when contracting an operator. Board Members typically have little experience with budgeting and it would be helpful for EPA to provide guidance in this regard. Students in fourth through sixth grades are also important groups to target with outreach and education programs.

Mr. Saddler commented that it is important to advocate for small systems and help train utility managers and Board Members in managerial and operational capacities. It should be a requirement that the Board be trained and certified as a condition of funding.

Ms. Dougherty commented that these are good ideas and that it will be important to ensure that all funds have the same requirements.

Mr. Saddler added that there should be universal requirements for all funding.

Mr. Vincent commented that outreach to small systems should be improved.

Ms. Dougherty added that states are not required to do outreach, but that a certain percentage of funding must go to small systems.

Ms. Eisenberg added that some states do better at outreach than others.

Ms. Morales followed up on Mr. Saddler's comment and added that in New Mexico there was an Executive Order in 2005 that required budget, asset management, and Board training in order to qualify for funding programs. However, they overlooked the fact that someone needed to be funded to deliver the services being required. It is important to develop training capacity so people can qualify for funding.

Mr. Saddler added that Board or managerial training might qualify as an approved expense.

Mr. Stephani commented that working with regional councils may be a good way to reach a lot of communities. In Connecticut, regional councils deal with a huge variety of issues, including tax assessments, Geographic Information Systems (GIS), planning commission trainings, etc. They have shown to be successful in getting information and trainings out to small towns.

ENFORCEMENT RESPONSE POLICY (ERP) AND ENFORCEMENT TARGETING TOOL (ETT):
REVIEW OF ERP AND ETT AND IMPLEMENTATION OF THE ERP

Mark Pollins and Benjamin Bahk, Office of Enforcement and Compliance Assurance (OECA)

Mr. Pollins and **Mr. Bahk** provided an overview of the development and implementation of the ERP and ETT. The goal of ERP is to identify and prioritize public water systems with the most serious and reoccurring violations and return them to compliance. Each public water system (PWS) is ranked according to the number, type, and length of violations. This allows states and EPA to prioritize funds when looking to return a system to compliance. Systems that are targeted have six months to return to compliance.

EPA produces a quarterly run of the ETT, which contains a prioritized list of systems in violation and distributes it to the Regions and states. Full transition to the ERP system occurred in October 2010, and EPA is providing training to the states and Regions.

Discussion:

Mr. Grunenfelder complemented EPA on staying focused on public health issues. He commented that there are many issues related to non-compliance that the water purveyor or state primacy agency does not have control over and it may be impossible to bring a system into compliance within six months. He asked whether there was any flexibility built into the ERP system for this.

Mr. Pollins responded that the six-month time period is not strict. It is meant to give states a timeframe within which to develop a plan to return systems to compliance. Drinking water enforcement has changed over the past 20 years and no longer needs to be absolutely rigid.

Ms. Kennedy inquired as to how violations that pose immediate risk to public health are handled.

Mr. Pollins responded that the program gives discretion to the states and that they would have to determine how to handle each issue.

Ms. Dougherty added that *E. coli* bacterial contamination is a good example of an acute health effect. PWSs are required to issue a boil water order.

Ms. Kennedy asked about systems that are not required to test their water. As in rural California, where there are no state agencies or water agencies.

Ms. Dougherty responded that the goal of this effort is to provide an enforcement targeting tool to determine where states should be targeting enforcement actions and at what point EPA might step in on its own.

Mr. Pollins added that it is a resource management tool.

Ms. Dougherty added that every violation remains a violation and has to be addressed according to the statute. This tool helps states prioritize where to focus their resources and that the focus is on known problems.

Mr. Pollins commented that one health-based violation and one additional violation would trigger ERP.

Ms. Kennedy asked what the process is for reporting known violations within a water system.

Ms. Pollins responded that the violation should be reported to a complaint line and does not affect ERP.

Ms. Dougherty added that OW receives complaints about water systems and works with EPA Regions to follow up.

Mr. Vincent commented that this system only seems to be triggered when there is a monitoring or MCL violation.

Mr. Pollins agreed and added that repeat monitoring violations can add up.

Mr. Vincent asked whether results from sanitary surveys are accounted for.

Mr. Bahk responded that the tool accounts for all potential violations and is focused on returning systems to compliance.

Ms. Dougherty added that a system can still be out of compliance, even if it does not directly violate an MCL. It is important to stay focused on health-based violations.

Mr. Pollins added that EPA is trying to automate the process as much as possible.

Mr. Johnson asked whether decisions regarding formal enforcement action are made on a case-by-case basis.

Mr. Pollins replied that decisions are made on a case-by-case basis. It needs to be determined how bilateral agreements can be better accounted for.

Ms. Dougherty added that the goal of bilateral compliance agreements is to bring a system back into compliance. If compliance never happens, this is not an appropriate form of assistance.

Mr. Pollins added that it sometimes takes more than six months to bring a system back into compliance, especially due to administrative inefficiencies.

Mr. Johnson commented that there is concern over informal action and how it is tracked.

Mr. Pollins responded that bilateral agreements can help track informal actions. It is important to see that systems are trying to come back into compliance before setting a strict cutoff date. It is also important that information about these actions is available to the public to improve transparency.

Ms. Dougherty added that most states do not currently do this.

Mr. Zarate-Bermudez inquired as to whether the data will be shared and if there is any investigation into occurrence of disease or outbreaks within the systems' service areas.

Mr. Pollins responded that the public should already be aware of any violations.

Ms. Dougherty added that EPA currently has data on violations, but does not have return-to-compliance data for all systems.

Mr. Pollins added that this tool is just another way to organize data that are currently available.

Ms. Weintraub asked for more information regarding resources available through return-to-compliance agreements.

Mr. Pollins responded that there are no grants or funding available. SRFs are state-run. In terms of assistance, OW has developed compliance assistance. If a system remains out

of compliance for more than six months, an independent enforcement order may be issued.

Ms. Weintraub asked what the options for protecting public health are. For example, if there is a small system with trihalomethane (THMs) violations, would it be shut down?

Mr. Pollins responded that this issue would be handled by the Region and state. This tool is developed to ensure that an enforcement conversation happens in a timely way.

Mr. Grunenfelder commented that it is challenging to address compliance in a system where there is no formal ownership. The last resort is to take control of the system through receivership.

Ms. Taylor added that from a community perspective, there should be a warning letter distributed when a system is found to be out of compliance. Water systems are increasingly privately owned.

Mr. Pollins added that they can issue an Administrative Order but cannot issue a penalty order without a violation of an Administrative Order.

Ms. Dougherty commented that enforcement authorities are limited by Congress.

Ms. Taylor added that it is important for consumers to understand the implications of a violation.

Mr. Pollins commented many systems are run by for-profit organizations and are expected to step up.

Ms. Sparrow commented that Utilities, Inc. has taken some systems into receivership. Often they do not take a system because it is not economically feasible and cannot get the rates needed to recover the investment. It is good that enforcement is separate from funding.

Mr. Kite commented that infrastructure throughout the U.S. is in rough shape and that it is difficult to address the problem because only a little can be done at any given time.

Meeting Summary: Thursday, December 9, 2010

RECAP OF PREVIOUS DAY AND COUNCIL DISCUSSION

*Gregg Grunenfelder, Deputy Secretary, Washington State Department of Health, and
Cynthia Dougherty, Director, OGWDW*

Ms. Kelly opened the meeting and **Mr. Grunenfelder** provided a review of what had been discussed on the previous day. He also introduced the agenda for the day, with the primary topic being the *Climate-Ready Water Utilities Working Group Final Report (CRWU Report)* to the National Drinking Water Advisory Council (NDWAC).

PRESENTATION OF THE CLIMATE READY WATER UTILITIES REPORT

*Paul Fleming, Seattle Public Utilities, Olga Morales, Rural Development Specialist,
Rural Community Assistance Corporation*

Mr. Fleming provided an introduction to the CRWU Report, indicating that the Report not only addresses the scientific and physical implications of climate change, but also addresses issues on the management side, including policy impacts. In the CRWU Report, the Working Group recognized the uncertainty of projecting the magnitude of local climate change impacts and that dramatic reductions in uncertainty are not expected going forward. However, the Working Group also stressed that uncertainty is not an excuse to forego action and that there are many no-regrets, low-cost actions that can and should be taken now, despite uncertainty.

There has been a lot of activity at the federal level. Federal agencies have been working horizontally through the Interagency Climate Change Adaptation Task Force, and also vertically through coordination with local, state, and industry partnerships.

Ms. Morales discussed the purpose of developing a CRWU program. Ongoing efforts at the federal level and within the water sector identify the need to have this program. The water sector depends on historical conditions data, but historical conditions are no longer predictors of future conditions. Another focus of discussion within the CRWU program was the fact that the majority of utilities lack resources to prepare and react to climate change and sustainability, particularly small rural systems. The Working Group, which is represented by a very diverse set of backgrounds and ideas, went further in the CRWU Report than simply identifying CRWUs.

Mr. Fleming emphasized the significance in the fact that the Working Group was able to reach a full consensus on the CRWU Report, despite the variety of backgrounds, views, and opinions. He gave credit to the working environment that was established on the front end, as well as the facilitation support from Ross and Associates. He stated that one of the first findings out of the gate was the need to embrace an adaptive management framework.

The key findings in the CRWU Report were highlighted in the presentation include:

- Climate readiness should reflect an adaptive learning and management framework;
- An expanded concept of infrastructure is a key element of readiness;
- Inclusion of sector interdependencies in decisions is critical to readiness;
- The capacity to engage in climate ready activities varies;
- A robust enabling environment is needed for success;
- Research should be guided by specific needs of the water sector; and
- Climate change impacts create challenges for regulatory stationarity.

The CRWU Report recommendations, which were highlighted in the presentation include:

- Create and implement a Climate Ready program at EPA in coordination with other federal partners;
- Develop a climate research strategy;
- Improve coordination on climate change among federal agencies and partners;
- Strengthen and deploy decision support models and tools;
- Enhance interdependent sector collaboration and broaden the scope of water resource management;
- Foster collaborations with associations; and
- Develop adaptive regulatory capacity.

The CRWU Report discusses a continuum of engagement from basic engagement to focused engagement. Basic engagement occurs when utilities have a general knowledge and awareness of climate change impacts to enable effective choices, where as focused engagement allows utilities that are being directly challenged to implement explicit climate-related planning decisions.

The Climate Ready Adaptive Response Framework (CRARF) is a living process, and utilities need to implement it in that way. The CRARF is comprised of two states: Stage 1 – Assess and Plan and Stage 2 – Implement and Evaluate.

DISCUSSION OF THE CLIMATE READY WATER UTILITIES REPORT

Ms. Dougherty stated that she was impressed with the work and leadership of the group. There were 21 representatives from the water sector with varying experience with climate issues. The Working Group did a great job in bringing everyone to a common level of understanding of the issues and what would work best for the sector as a whole. She indicated that it is not typical to think beyond the drinking water sector, but for this project, this was done quite a bit. It is more challenging to approach a problem this way, but important.

Ms. Stoner indicated that the CRWU Report was a thoughtful, intelligent piece of work that advances thinking, and adds effective challenges for the agency to address.

Mr. Travers noted that he thought the diversity of the group was a great strength. There were large systems, small systems, systems that were very progressive towards climate change adaptation and those that were not engaged with climate change adaptation at all and were skeptical about the ability to deal with climate change. Those smaller systems that are concerned about their ability to deal with climate change represent the majority of water systems. These are not the systems that we see at conferences, but they are the majority of the water sector. The CRARF is a much more thoughtful outcome of the discussion than what EPA had originally envisioned: a checklist of what defines a CRWU. Shortly after the CRWU Report came out, the *CEQ Progress Report of the Interagency Climate Change Adaptation Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy* (<http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>) was released. The CEQ Report's Guiding Principles for Adaptation Policy and Actions were very reaffirming of the work that has been conducted by the Working Group. All ten of the Guiding Principles fit into the CRARF. He also thanked Paul Fleming and Olga Morales for their leadership and commended them as effective co-chairs.

Mr. Grunenfelder indicated that during the discussion to launch the Working Group, there was Executive Order being developed in Washington State, and he was concerned about duplication of efforts as each state attempted to develop an approach to climate change adaptation. However, the CRWU Report was well developed and will save the water sector a lot of time and effort.

Ms. Kennedy thanked Ms. Morales and Mr. Fleming for their leadership on this subject. She referenced the discussion regarding small utilities and asked whether there were thoughts of follow-up with disadvantaged (i.e., EJ) communities. She noted that many small systems are not able to engage with disadvantaged communities and, more specifically, multi-lingual populations. Climate Change is a topic that affects everyone and it is important to consider how the message will be communicated out.

Mr. Fleming responded that the Working Group tried to weave EJ considerations, including communication to multi-lingual populations, into the discussion. This was not a focal point, but recognition needed to be included as part of the response.

Ms. Morales followed that one of the recommendations to EPA is to develop a strong education piece, and there was thought that this issue would be built into this. There is a need for EPA to develop educational materials and tools for that special population group.

Mr. Owen stated that he appreciated the thoroughness of the report and read every word of the CRWU Report. He asked whether the presenters could elaborate on the discussion regarding *Recommendation 9: Develop an adaptive regulatory capacity in response to potential climate change alteration of underlying ecological conditions and systems*. He followed that in discussions and in past work he had done, he observed that there are multiagency considerations as water moves through a system, and that getting all agencies to work together is critical. Ensuring that an adaptive strategy in one area is not

maladaptive in another is important. EPA needs to think about how the regulatory framework will work across all sectors.

Mr. Fleming responded that the Working Group wanted to get the concept on the table, first and foremost, and then see where it goes. Fundamentally, the Working Group approached the issue as a departure from historic conditions. Working under the assumption of stationarity is no longer an option. He stated that we are going from a static to a more dynamic environment, and that this has real implications for how utilities will manage systems. He further suggested that we will need to explore what these implications mean to regulations. The Working Group is hopeful that the interpretation will include a consideration for looking across water silos, and the Working Group did propose pilot projects to explore just that.

Ms. Morales stated that having a system in place to monitor indicators is very necessary. She explained that regulations have been based on historical knowledge, and that as we move to a more dynamic future, we need to identify how we are going to react. None of the Working Group members know the answer to this now, but they do know that there is a need to address this issue.

Ms. Taylor thanked the presenters, noting that she appreciated the attention to equity issues. She asked whether case studies were considered from the members with a longer history of dealing with this issue.

Mr. Fleming responded that a list of actions that had been taken by different participants in the Working Group was being collated. These were not necessarily case studies, but were along the same line. Since these were not fully fleshed out, they were not included in the CRWU Report. For example, in Australia there is a big push toward large-scale infrastructure (e.g., desalination plants). There is also a strong emphasis on water sensitive urban design (e.g., catchments within urban areas, supply water for non-potable uses, water re-use, water harvesting). Regarding public acceptance, there is a fair amount of acceptance and willingness to have people take more responsibility of their water future than solely relying on the utility.

Ms. Taylor asked whether there were any specific programs to point to that demonstrate how to build public support.

Mr. Fleming responded that Melbourne, Australia, has a 140-liter target for household water consumption, and this target is made very public (e.g., through local newspapers).

Mr. Travers followed that the East Bay Municipal Utility District (MUD) had conducted a survey to assess how their customers think climate change might affect water resources; the study found that about 70 – 80% of respondents identified a relationship between climate change and future water use in the area. This could be considered motivation to be more aggressive in addressing the issue.

Ms. Weintraub noted that she observed in the CDC/AWWA project, that some of the smaller utilities were confronting the opposite of what was found in the East Bay MUD. The community did not have any support for expending resources toward this goal. She mentioned that this is eluded to in the CRARF, but asked if the speakers could expand on what kinds of things the Council or Workgroup can suggest to EPA to address that and help utilities be in a better position to move forward.

Ms. Morales noted that one of the things the Workgroup keeps going back to is the need for education. It needs to be targeted to the general public, but specific to decision makers. Often times, people don't have a face to look to. The public will look to the water utility, and it is important for them to be educated and be able to educate others, but EPA needs to provide information and tools to decision makers to transfer education to the general public. Climate change has the ability to impact level of service, and therefore, raise rates. Education may help public acceptance to raised rates.

Mr. Travers mentioned that in the CRWU Report, there is an emphasis on water utilities needing to understand what the community's response is to climate change and then tailor actions to that. This is an important first step. The community needs to gauge customers' perceptions of climate change and then tailor the response to that level of understanding. It may be appropriate in some communities to have little to no emphasis directly on climate change. First, you need to determine what the vulnerabilities are.

Ms. Ward-Robinson thanked the Working Group for their effort, indicating that she was not here in 2009. She stated that when working across groups, economics, capacity, and knowledge, all come into play. It is important to be as explicit and specific about climate change implications as possible so that they can be accepted or entertained. Community engagement is very important. She discussed that she was part of a national drinking water strategy for a diverse community where community engagement was not discussed. There was distrust in the strategy and customers did not understand why their rates were raised. There were severe rainfall events and drought; the country was having major problems, but they refused to pay higher rates. Knowledge needs to be dispensed at the community level in order to get buy-in. When you educate the community, strategies need to be incorporated, including the option of raising rates.

A community's relationship with water can be a cultural issue. It is important to make sure whatever the adaptive practice is, that its implication is articulated so that it is not seen as regressive. For example, some communities see the idea of rainwater harvesting as repulsive and others see it as a green technology. Cultural nuances are important, and an integrated response is warranted. Procurement, delivery, and education at the community and policy level need to cut across all these factors.

Ms. Sparrow followed that this is a big issue. Education and outreach are critical. Our culture in this country is problematic, because we are slow to react until there is a crisis. Climate change is an issue that requires forethought and planning. In other countries, it has taken strong leadership and commitment. If it is seen as an important issue from the top, others will follow. In the U.S., there is debate, and we try to come to a consensus

before making any actions. This is going to require federal and state level leadership to identify what needs to be done. This is not an issue where people have the time to come to a consensus. It is also possible that a consensus may not be attainable until there is a crisis, and that will be too late. We will be paralyzed. In order to move forward, we need strong federal policies on water.

Mr. Grunenfelder stated that strong federal leadership on climate change is dicey. He then discussed some of the specific recommendations of the Working Group Report. He feels that *Recommendation 1: EPA should develop a well-coordinated program to articulate and support the adoption of climate ready activities by utilities* is important. The CRWU program must not be viewed as a specific initiative. It is critical in order to be effective and sustain the program, that climate change adaptation is integrated into other overarching efforts. This is paramount to the success of what gets done; especially in order to be funded in today's economy. With regard to *Recommendation 7: Improve access to and dissemination of easy-to-understand and locally relevant climate information*, he asked whether there is any advantage to specifically highlighting those who are involved in local and regional modeling.

Mr. Fleming responded that it certainly would be. The Regional Integrated Sciences and Assessments (RISA) program's Climate Impacts Group (CIG) at the University of Washington is one of them. The National Oceanic and Atmospheric Administration (NOAA) has around nine to 11 RISA teams/programs. In addition, the Department of the Interior (DOI) also has eight Climate Science Centers around the country. There is also a Memorandum of Understanding (MOU) between NOAA and DOI regarding how to coordinate their programs and data, since there are a lot of moving parts. NOAA also maintains a web portal, which is a good venue for the public to retrieve climate related information. He noted that he has worked with the CIG in the past and met with the new NOAA group to talk about Seattle specific needs for climate change adaptation. These were different needs than what he had seen in other cities and it was important to identify the local needs. There may not be enough staff to support this type of effort in all cities across the country, but it is a good place to start.

Mr. Owen referenced *Finding 2: Proactive, climate ready actions will enhance water sector utility resilience*, noting that the operative word is resilience. While this is an additional constraint, it does not have to be a stand-alone initiative. There are many things that utilities already do that are methods they can adapt to climate change. It just needs to be brought into the dialogue. Climate change should be one of the considerations in the planning process, if there is a planning process. The second part of it is that there are many different components to climate change that need to be considered: spatial, magnitude, and temporal issues. As an example, Lee County, Florida, has about 600 pump stations on the coast. What is the expected useful life for some of these pump stations? If it is 10 years, then climate change is going to play a different role in the decision making, versus if it is 50 years. There are a lot of different approaches, but if we can think of climate change as just an additional constraint to consider in our decision making, it can make it easier.

Mr. Fleming further stated that climate change considerations need to be incorporated in to current plans. In the literature this is referred to as mainstreaming adaptation. In the interim, there may be some situations where it needs to be separated out if it requires some focused effort, so that it does not get lost in the day-to-day.

Ms. Taylor indicated that she agreed with Ms. Sparrow's comment. She further stated that there are specific economic interests that are driving the paralysis at the local, state, and federal level. It is important that the CRWU Report is seen as an opportunity to build aggressive leadership, paying attention to equity issues, and top-down communication issues. It may be important to add a recommendation to include language and research associated with the cost of not taking these measures. There is growing academic and policy research that only includes the cost of additional regulations, but there will be higher costs to localities if these steps are not taken.

Ms. Weintraub referenced her comment on Day 1 related to re-using water for non-potable uses. She asked whether there is a place for this more explicitly within the CRWU Report.

Mr. Fleming responded that this is included implicitly within the expanded notion of infrastructure. He further indicated that this was not an explicit component of the conversation, but was implicit within the conversation.

Ms. Weintraub followed that there is a lot of discussion regarding drought, but on the other side of that, there are impacts from heavy rainfall events. She stated that she knows that many utilities have strong and/or strengthening stormwater components. When paired with wastewater, there is an opportunity to link that together, as a way to manage one of the potential impacts to climate change: finding new uses for non-potable water and also diminishing the need for potable water for these uses.

Mr. Vincent suggested that after Mr. Owen mentioned the issue in Fort Myers, he doesn't recall associations with other utilities (i.e., the Department of Public Works). There must be things that help utilities with climate change issues that are done by other local agencies. Are these links discussed within the CRWU Report?

Mr. Fleming responded that the CRWU Report discusses broadly the interdependency of sectors that may not think of themselves as interdependent. He further stated that we need to do a better job of thinking about interdependencies across multiple sectors. There are implications of climate change on other sectors, which impact the water sector. There are opportunities to work across boundaries to enhance resiliency.

OPEN PUBLIC COMMENTS

Steve Via, Regulatory Engineer, AWWA, and **Erica Brown**, Director of Regulatory Affairs and Scientific Program Development, AMWA, made public comments on behalf of their respective organizations.

Mr. Via distributed a hardcopy reproduction of the AWWA's Oral Comment (Appendix IV). He discussed the interaction and need for an integrated strategy on water between the Clean Water Act (CWA) and Safe Drinking Water Act (SDWA). He asked that EPA support the integration and prioritize the next steps identified by NDWAC on this issue. He further noted that in being mindful of the current economy, there is an opportunity for EPA and utilities to develop cost effective approaches for adapting to climate change.

Two measures were specifically addressed, which are also discussed in the hardcopy version (Appendix IV):

1. Timely notification of affected downstream water suppliers by NPDES permit holders when untreated or partially treated wastewater represents a significant microbial risk, while not raising unnecessary public concern; and
2. Effective motivation of the farm community to reduce non-point source agricultural pollution introducing nitrogen into groundwater supplies, pathogens into surface and ground waters, and nutrients into drinking water reservoirs.

He suggested that there is a lot of stakeholder interest and the need for a dialogue between the water and wastewater management communities to move forward collaboratively in identifying next steps and solutions together instead of individually.

Ms. Brown distributed a hardcopy reproduction of the AMWA's Comments (Appendix IV). She then read the hardcopy aloud. She noted that this is a complex issue and in order to be "climate ready," EPA will need to act holistically. She suggested that the CRWU Report be distributed throughout OW and EPA as a whole as "OneEPA."

COUNCIL DELIBERATIONS AND RECOMMENDATIONS ON THE CRWU REPORT

Mr. Grunenfelder asked, assuming the Council does want to transmit the CRWU Report to EPA, whether there are any changes to the report or specific issues to highlight in the transmittal letter. If there are any changes to the CRWU Report, he suggested that these could be drafted over lunch. He reviewed what he had noted as key issues:

- The issue of cost/benefit, including the cost of no action;
- *Finding 10: The Water Sector is underserved by available climate science and by information regarding adaptation and mitigation costs and benefits;* and
- *Recommendation 10: Develop a comprehensive water sector, climate change research strategy.*

He also identified issues that arose that could be stressed in the transmittal letter, including continued leadership around the CRWU Report and climate change, and the idea of a holistic, integrated approach.

Ms. Sparrow stated that although it may be very tempting to "wordsmith," there was a comprehensive process used to develop the CRWU Report, and she encouraged the Council to leave the CRWU Report intact. She suggested some of the issues that have been brought up yesterday and today could be discussed further in the transmittal letter.

Ms. Dougherty indicated that the CRWU Report will need to be transmitted from NDWAC to EPA, rather than from the Working Group to EPA or NDWAC. She also urged that the transmittal letter be put into the CRWU Report so that it will be a part of the public posting, and the information in the letter is not lost.

Ms. Kennedy indicated that one of Administrator Jackson's priorities is a commitment to EJ. It is apparent in the Administrator's tours of EJ communities, and in her press comments. She suggested that specific EJ-related language should be incorporated into the CRWU Report. There has been a significant policy change with respect to EJ in this Administration, and the CRWU Report could reaffirm the commitment to EJ. This should be emphasized, especially in states where demographics have changed drastically. Communities need tools and communication strategies.

Mr. Grunenfelder noted that disadvantaged populations are referenced in the introduction to the CRWU Report. This could be enhanced, but it should be considered whether the language should be changed within the CRWU Report or added to the cover letter.

Mr. Kite suggested that if you can get 20 people together to agree on something, that is a big deal. He indicated that there could be some minor tweaks, but that the language in the CRWU Report should not be changed too much.

Ms. Taylor referenced *Finding 10: The Water Sector is underserved by available climate science and by information regarding adaptation and mitigation costs and benefits* and *Recommendation 10: Develop a comprehensive water sector, climate change research strategy*. She noted that there is an opportunity to reinforce these in the letter, but the CRWU Report does not need to be changed.

Ms. Weintraub indicated that she accepted this approach also. She suggested that the CRWU Report was the work of the Working Group, but is being transmitted by NDWAC. She followed that she saw the opportunity to submit a substantive letter of transmission to highlight and expand upon some of the points, incorporating Ms. Kennedy's and Ms. Brown's comments. She noted that she saw the opportunity for it to be used more broadly than by just the OGWDW. She referenced her previous comment regarding water reuse and suggested that this also be included in the letter.

Mr. Kite referenced Ms. Kennedy's comment and followed that it is important to highlight disproportionate impacts to disadvantaged communities with respect to both health and water implications.

Mr. Vincent noted that the CRWU Report is a terrific report. He followed that EJ is a critical component, more so since it is one of the Administrator's objectives, and suggested that any links that will help push this forward and maybe further up the list would be beneficial. He noted that he was unsure whether EJ was a significant White House objective as well, but if so, then this link should be made as well. He also

questioned if there are any specific offices or other specific people the CRWU Report should be shared with.

Ms. Dougherty recommended that the CRWU Report be shared with other Federal agencies, as well as other offices within EPA dealing with climate change issues.

Ms. Morales thanked the Council for the CRWU Report, and felt that the proposal to incorporate comments into the letter and not make any major changes to the CRWU Report was the way to go. One of the items proposed to be highlighted is the importance that climate change adaptation does not represent the need to reinvent something that we don't already have. This approach goes beyond the Agency and down to the community and water system level. Resources that EPA has already developed can be used in this effort.

Ms. Taylor asked whether the Working Group or others knew whether the National Environmental Justice Advisory Council (NEJAC) had recommendations related to climate change and whether it would be appropriate to include this language in the letter with NDWAC's support.

Ms. Metchis responded that she was unsure about NEJAC, but that EPA's Office of Environmental Justice has been working on climate change issues.

Ms. Kelly mentioned that NEJAC's most recent meeting was held on November 16, 2010.

Ms. Weintraub stated that in the presentation, other work that had been done was acknowledged as such, and that this may be something to include in the letter of transmission.

Ms. Dougherty suggested that NDWAC reference their preferences with their own recommendations.

Mr. Owen indicated that there are a lot of long-term actions in the CRWU Report, in terms of physically making utilities climate ready. This is a different way of thinking and planning, as opposed to a list of items to be done (e.g., infrastructure improvements). The CRWU Report, in and of itself, represents long-term thinking about how to approach the planning process. He stated that the Administrator has to make decisions about what to focus on. With the emphasis on the economy these days, he questioned whether there is a way to say in the letter that we shouldn't let the current economic climate be an excuse for not acting on this now, especially since this is not a major program that needs funding, but represents a change in the way we think and plan. He noted that this might have a more receptive response.

Ms. Morales cautioned that there is a danger in listing different initiatives, because then there is the possibility of excluding some.

Mr. Grunenfelder concluded that it seemed that there was consensus to not modify the CRWU Report and instead highlight different issues in the letter.

Mr. Grunenfelder put to motion and a vote to forward CRWU Report as it stands, with letter including modifications. Ms. Sparrow seconded the motion. All were in favor, and none opposed.

Mr. Grunenfelder summarized what he heard as the key elements to include in the letter:

- Discuss that Federal leadership is needed, despite uncertainties;
- Acknowledge current economic standing, and highlight that this is not a new program, but a new way of thinking;
- Highlight that the cost of inaction is significant;
- Acknowledge the disproportionate effects on EJ communities; and
- Encourage the Administrator to look at implementing across offices, including ORD.

Ms. Sparrow followed that a very brief summary of the key points of the CRWU Report be described at the beginning of the letter.

Mr. Vincent noted that part of the planning process would involve infrastructure improvements, which means jobs. This would also support disaster avoidance. He suggested that he is unsure whether this needs to be included, but was worth mentioning within the conversation regarding the costs/risks of inaction.

Ms. Weintraub asked whether the CRWU Report overview that was distributed today would be attached to the letter.

Ms. Dougherty suggested that the CRWU Report overview was not intended to be included in the submission.

Ms. Morales followed that the CRWU Report overview was still in draft format. She suggested that instead of including the overview, the language from the overview could be used and built upon.

Ms. Weintraub noted that the listing of the 11 Findings and 12 Recommendations within the CRWU Report overview was helpful.

Mr. Travers confirmed that the CRWU Report overview was still in draft format. He also stated that the NEJAC is preliminarily engaged in climate change issues, but has not issued anything formal or informal.

Mr. Travers reviewed the draft letter. The key points included:

- Focus on taking action on climate change is a priority;
- Challenging economy and competition for funding – focus on transformation of existing activities and coordination;

- Current economic conditions are not a reason to delay actions, and that EPA should accelerate and support research on the cost of inaction, noting that customer and public understanding of these costs is essential;
- EJ – focus attention on underserved and disadvantaged communities;
- Working Group – diverse cross-section of water sector;
- Need for strong, focused leadership and direction;
- Inform multiple aspects of climate change efforts – call for improved federal coordination;
- Summary of NDWAC and charge;
- List of findings;
- List of recommendations; and
- CRARF.

Mr. Owen indicated that the NDWAC letter takes into account the issues that were discussed, primarily: the economy should not be an excuse for inaction, potential costs of inaction, EJ, and leadership.

Ms. Sparrow recommended that the NDWAC charge and summary of the CRWU Report be provided earlier in the letter and that the second paragraph of the economy discussion be moved to the end of the letter.

Mr. Grunenfelder suggested that the letter be kept short and provide attachments with more detail, and asked whether it would make sense to attach the high level overview.

Mr. Zarate-Bermudez recommended that the CDC be included, because this is an important public health issue and the CDC is very active in this area.

Mr. Vincent suggested that the USDA be included as well.

Ms. Taylor suggested that there are intrinsic benefits to these recommendations, regardless of what the climate outcomes are and it may be worth addressing that.

Mr. Grunenfelder stated that the one thing that was addressed was the potential to inform multiple efforts, and the issue of EPA using the CRWU Report in an integrated, holistic way so that it is sustainable and part of their work.

Ms. Dougherty and **Mr. Grunenfelder** agreed that the appropriate next step would be to send out a revised letter for comment after the meeting for finalization.

WORKING LUNCH

Mr. Owen, Ms. Ward-Robinson, Ms. Taylor, Ms. Morales, and Mr. Travers prepared a draft of the transmittal letter, with the support of Ms. Kelly.

Ms. Dougherty presented awards to those who had served three-year terms, which included:

Mr. Timothy Kite
Ms. Olga Morales
Mr. Carl Stephani
Mr. Gregg Grunenfelder

Ms. Dougherty stated that they have nominations for current vacancies and plan to have the vacancies filled before the spring meeting.

Mr. Grunenfelder noted that it has been a privilege to serve on the Council for the last six years.

UNDERGROUND INJECTION CONTROL (UIC) PROGRAM UPDATE

Geologic Sequestration of Carbon Dioxide (UIC Program, Final Class VI Rule)
Mary Rose Bayer, DWPD, OGWW

Ms. Bayer provided a presentation on the UIC Program's Final Class VI Rule for geologic sequestration of carbon dioxide. The focus of the Rule is on the protection of underground sources of drinking water (USDWs). The Rule builds on the existing regulatory framework of the UIC program. Geologic sequestration is a voluntary tool for climate mitigation.

The Class VI well requirements include that the sites are well characterized and selected in an appropriate manner. The delineation of the Area of Review is conducted up front and then there is a re-evaluation of the Area of Review to incorporate monitoring and other data. Well construction requirements are specific as well. The testing and monitoring program must be based on a plan that may be revised and updated over time. There also must be site-specific project plans that are informed by site-specific information and used throughout the life of the project.

There is a new term: "post-injection site care period," which is when the plume and pressure front are tracked until there is proof of no endangerment to USDWs. The default period is 50 years, but the owner/operator may demonstrate that less time is required through additional information or it may be required that more time is needed. Injection depth waivers may also be provided above or between USDWs; requirements include confining zones and monitoring above, below, and within the USDW.

Next steps include development of guidance documents for public comment and State implementation workshops.

Discussion:

Mr. Grunenfelder asked about public notification and opportunities for comment during permitting processes.

Ms. Bayer responded that there is a public comment period and a requirement for public notice. If there is sufficient interest in the permit notice, then there would be a public

hearing. There are a lot of stakeholders and EPA anticipates that most of these projects will involve public hearings.

Ms. Codrington followed that a number of tools are being developed that permit writers can use.

Mr. Grunenfelder asked for clarification regarding the 50-year monitoring period.

Ms. Bayer answered that the default is 50 years, which is in the proposal for the Final Rule. This can be extended or shortened. For example, if the owner/operator ceases injection and has a monitoring requirement of 50 years, he/she must provide a non-endangerment demonstration to shorten the requirement. If the non-endangerment demonstration confirms within less than 50 years, then the monitoring period can be shortened.

Ms. Weintraub asked whether there are any existing pilot projects classified under this Rule.

Ms. Bayer indicated that it depends on the well classification that they currently have. Existing Class I and Class V permits used for geologic sequestration will have one year to apply for a Class VI permit. They expect that owners/operators of a few Class V wells that are experimental will apply for a Class VI permit. Class II, enhanced oil and gas recovery wells, are a different category. Technical criteria would be considered at the point an owner/operator would reclassify a well to Class VI. It is anticipated that there will be some Class II wells that will become Class VI wells in the future.

Ms. Taylor asked about well depth injection waivers, specifically, the additional monitoring and site characterization requirements, and whether there is any minimum distance requirement.

Ms. Bayer answered that there is not a minimum depth/distance requirement. However, the owner/operator and director must include distances in their application.

Ms. Taylor asked if states have primacy, will EPA provide oversight on the waiver process.

Ms. Bayer responded that the waiver process is overseen by the EPA, even if the state has primacy.

Mr. Owen suggested that because of the complexity of evaluating Class VI wells, one of the recommendations the NDWAC had was that EPA should determine requirements for states to have primacy. He asked about the process for EPA to grant authority to states for these capabilities.

Ms. Bayer indicated that this was included in the Final Rule. The primacy application requires demonstration that the program has sufficient resources and capabilities and that it is at least as stringent as EPA's program.

Ms. Dougherty noted that the UIC program is a bit different than other state primacy programs; the State must promulgate a rule to permit a state program, which requires EPA develop a regulation and provide for public comment.

Mr. Grunenfelder followed that a state can also have primacy over other classes and not over Class VI.

HYDRAULIC FRACTURING

Jeff Jollie, Hydrogeologist, Protection Branch, DWPD, OGWDW

Mr. Jollie provided a presentation on EPA Program activities related to hydraulic fracturing. He provided background technical information and an update on the ORD study, including the proposed schedule and the four public meetings recently held that were well-attended by stakeholders.

Discussion:

Mr. Vincent asked whether hydraulic fracturing could be a source of methane and benzene.

Ms. Codrington responded that the investigation is ongoing and that EPA does not have this information. EPA's website provides the most up-to-date information.

Mr. Vincent asked how diesel fuel is used in these wells.

Mr. Jollie answered that if it is used, its purpose would be to act as a carrier in the mixture and as a gelling agent.

Ms. Dougherty followed that EPA has an MOU with major firms to not use diesel fuel for hydraulic fracturing in coalbed methane wells. At that time, it seemed that hydraulic fracturing was mostly used in coalbed methane wells.

Mr. Vincent asked whether there are other primary or secondary contaminants that have been found.

Mr. Jollie responded that this information is being collected as part of the study.

Ms. Codrington followed that the groundwater found in Marcellus shale may be fairly high in terms of radionuclides and total dissolved solids (TDS).

Ms. Dougherty referenced the hydraulic fracturing schematic in the presentation. ORD is looking at the whole movement of water to understand what could happen, and to gather information on what has happened.

Ms. Codrington followed that historically natural gas was extracted mostly from vertical wells that were not so deep, so there was not a lot of hydraulic fracturing. Now that directional drilling is more common and effective, oil and gas producers are looking at other formations in other parts of the country. There is a need to pay attention to where else it may be used and how to ensure protection of drinking water.

Mr. Kite asked whether homes in the area are being monitored.

Ms. Codrington responded that oil and gas production activities tend to be exempt from many environmental statutes, and that some authority that EPA had has now been transferred to the states. There is some coverage at the federal level and EPA is looking at clarifying what authority it has.

Mr. Kite followed that there was a special on the television show *60 Minutes* regarding hydraulic fracturing where residents had contaminated water from nearby hydraulic fracturing activities. He stated that he is worried about the sensitivity of Illinois aquifers and the serious environmental threats posed by hydraulic fracturing processes.

Ms. Codrington followed that as the nation moves forward, we need to be conscience to enable the protection of water resources. This is a challenge for everybody.

Ms. Dougherty followed that EPA has limited authority over hydraulic fracturing.

Ms. Weintraub questioned whether the Independent Petroleum Association of America (IPAA) lawsuit was a surprise.

Ms. Dougherty answered that it was, and that EPA was not expecting a suit.

Ms. Weintraub asked whether EPA noticed any differences in concerns geographically during the public meetings and whether public outreach was conducted in areas where there were not in-person public meetings.

Ms. Codrington stated that the public meetings were conducted in areas with the most hydraulic fracturing activity. In addition, EPA conducted a series of webcasts, which were open to the general public. She noted that outreach was targeted to industry, non-governmental organizations (NGOs), states, the federal government, and one also to the Onondaga Tribe in New York. In all public meetings, except for one held in Denver, EPA heard strong public concern. There was a strong industry interest in making sure people knew this had been happening without major incidents. Overall, EPA received a lot of concerns and feedback on the study.

Ms. Weintraub asked whether it could be clarified as to how all of the concerns were going to be balanced, presented to the SAB, and how they will provide feedback.

Ms. Codrington stated that there are two prongs to the study. The first is the ORD study and the second prong will include working at the state and federal level (under appropriate authorities) for permitting.

Ms. Taylor noted that EPA and the States would agree that they were not out in front on this one. She noted that there has been significant interest in coalbed methane in South Carolina and asked whether there has been any discussion about a coal study.

Ms. Codrington followed that SAB is forming a subgroup and is hoping to wrap up in January. That subgroup will look at the question of where case studies should be, and whether they should all be shale or a mix of coalbed and shale. Those decisions haven't been made. When SAB makes a recommendation and goes public, that would be a time to move forward.

Ms. Morales noted the focus of the SDWA and the commitment to maintain the quality of water that we have. She asked how we go about finding out the companies using diesel fuel for hydraulic fracturing. Another concern is financial responsibility. This is a major issue.

Ms. Codrington followed that SDWA primacy states develop regulations under two different statutory standards. For Class I, III, IV, V, and now VI, wells, the requirement is that the state has to have minimum standards equal to the federal standards. For Class II, the state program must be as effective as the federal standards.

Ms. Taylor said that she reviewed a related document by the endocrine exchange. It is an informative piece and she mentioned that she would pass it along.

Mr. Owen indicated that the State of New York placed a moratorium on hydraulic fracturing and asked whether Governor Patterson signed the bill.

Ms. Dougherty stated that it had not yet been signed, and added that in Wyoming, information on what is in hydraulic fracturing fluids must be shared with the public.

Mr. Vincent stated that being from a state that doesn't have many oil and gas wells, he still thinks that financial responsibility is key to ensuring that long-term corrective actions can be taken if/when needed. He indicated that one doesn't know until the well is drilled what the water quality is like. There needs to be a bond. In Florida, determining the source of chemicals is very difficult, so gas stations are taxed in order to pay for monitoring and remediation.

Ms. Dougherty suggested that the group remember that EPA has limited authority related to oil and gas extraction. The UIC Program has authority when diesel fuel is being used, or if water is being withdrawn and then injected back into the ground.

Ms. Morales questioned whether EPA can work with other agencies to put these requirements into effect, even though the SDWA does not have any authority to regulate. For example, an owner/operator must test water before and after installation. She further suggested that thinking outside the box may be necessary. She stated that we need oil and gas; we also need clean drinking water.

Ms. Codrington indicated that there are gaps in the science on appropriate next steps. Industry and environmental organizations are trying to fill the gaps and provide model regulations.

Ms. Taylor followed that climate change is a concern and that there is the opportunity for uncontrolled releases of natural gas. She asked whether this is being taken into consideration.

Ms. Codrington answered that air issues have been raised, and that EPA Region 6 is conducting a study on air quality related to gas production in the Fort Worth, Texas, area.

DISCUSS AGENDA ITEMS FOR SPRING 2011 MEETING AND WRAP UP

Gregg Grunenfelder, Deputy Secretary, Washington State Department of Health
Suzanne Kelly, DFO, EPA OGWDW

Mr. Grunenfelder asked for suggested topics and locations for the next meeting. He indicated a few potential topics could be: follow-up on links between the CWA and SDWA, and CDC issues around drinking water (e.g., links to epidemiological studies and outbreak information).

Mr. Zarate-Bermudez and **Ms. Morales** agreed they would like to continue to hear updates related to climate change issues.

Ms. Kennedy stated that she would like to hear more information about the EPA's Sustainable Communities initiative.

Ms. Weintraub stated she would like a follow-up on hydraulic fracturing. She would also like to have a refresher on the Total Coliform Rule (TCR) revisions. She asked whether there would be timely updates at that point or whether it would be better to wait.

Ms. Dougherty noted that an update could be provided, but there would not be much new information.

Ms. Morales suggested that she would like to hear about the new drinking water strategy.

Mr. Vincent stated that he would like more information on the CDC/AWWA project water notification for emergencies, and the guidance manual for operators and health authorities.

Mr. Zarate-Bermudez agreed to follow up with a contact at the CDC.

Mr. Owen indicated that he would like to hear more about EPA's pilot event detection systems.

Mr. Grunenfelder stated that if Congress proceeds with the Chemicals Security Act, this would be a good topic.

Ms. Dougherty suggested that she believes this was just extended. The US Department of Homeland Security (DHS) may take another year to sort it out.

Ms. Taylor stated that she knew the environmental finance center in Chapel Hill, North Carolina, may have good presenters to speak to how the Council recommends policies on the SDWA.

Mr. Grunenfelder noted that he appreciated everyone's thoughts and engagement, and felt that there was a lot of good feedback. The next meeting was identified as being within the April – June timeframe. Some potential locations that were identified include: North Carolina, Chicago, and San Francisco.

Mr. Grunenfelder and Ms. Kelly (DFO) adjourned the meeting.